

BTF-LIGHTING DR03W+RC03RFB

BTF-LIGHTING DR03W RGB SPI Controller & RC03RF RF Remote Kit User Manual

Model: DR03W+RC03RFB | Brand: BTF-LIGHTING

1. INTRODUCTION

This manual provides detailed instructions for the installation, operation, and troubleshooting of your BTF-LIGHTING DR03W RGB SPI Controller and RC03RF RF Remote Kit. Please read this manual thoroughly before use to ensure proper functionality and safety.

2. PRODUCT FEATURES

- **WIFI Control:** Control your LED strips via the Tuya/Smart Life APP. Supports 2.4G Wi-Fi home networks only (5.0 GHz networks are not supported).
- **Wide Compatibility:** Supports most one-wire LED driver ICs, including FCOB RGB WS2811 IC, WS2811, WS2812B, WS2813, WS2815, and TM1934. (Does not control PWM RGB or RGBW LED strips without an IC).
- **Group Control:** Allows 4-zone group control with no device limits. Each remote can be paired with one or more controllers. Features auto transmitting and signal synchronization for independent control of individual areas. Control distance up to 98 feet in open environments.
- **2.4G Wireless Transmitting:** The RC03RFB remote uses advanced 2.4GHz RF wireless transmission technology, offering a control range of up to 98 feet. Features a touch wheel and button design for ease of use.
- **Color Calibration:** Core type and R/G/B color sequence can be adjusted via the Tuya app. This feature allows correction if the app color is inconsistent with the LED strip's actual color (e.g., green appears blue). Supports 6 color sequences: RGB, RBG, BRG, BGR, GRB, GBR.
- **Rich Dynamic Effects:** Includes 44 default dynamic modes and over 10 custom dynamic modes such as jumping, breathing, flickering, flowing, rainbow, and meteor. Color, brightness, and speed are adjustable.
- **Multi-functionality:** Supports voice commands, timer settings, countdown turn on/off, Tap-to-Run and Automation, scene customization, sleep/wakeup plans, Do Not Disturb mode, and device sharing.
- **Full or Segmented Control:** RGB adjustment range from 20 to 720 ICs. Allows changing the color of the full strip or individual segments via the Tuya APP. Supports DC 5V/DC12V/24V wide working voltage.

3. PACKAGE CONTENTS

- DR03W RGB SPI Controller
- RC03RF RF Remote
- User Manual

4. SETUP & INSTALLATION

Ensure all power is disconnected before installation. Connect the LED strip to the controller and the controller to the appropriate power supply. The power supply voltage **MUST** match the working voltage of your LED strip (e.g., use a 5V power supply for 5V LED strips, and a 12V power supply for 12V LED strips).

Warning: Incorrect polarity connection (reverse +/-) may cause permanent damage to the controller. Always double-check connections before applying power.

4.1 Wiring Diagrams



Signal Transmitting & Mode Synchronization

Controller can transfer the signal from remote to another controller within 30m, as long as there is a controller within 30m, control distance can be limitless.

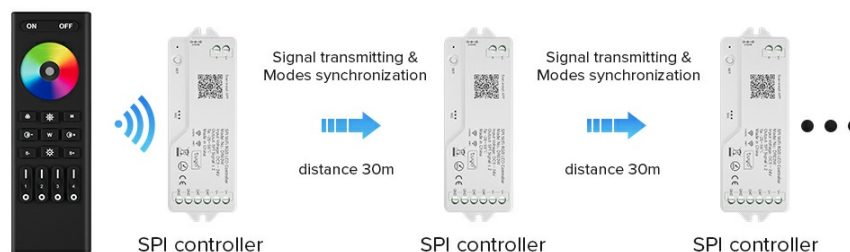


Figure 2: Wiring diagram for DR03W controller with a 3-pin WS2812B LED strip. Connect positive electrode, data, and negative electrode. The arrow on the strip indicates data/signal direction. For 5V LED strips, use a 5V power supply.

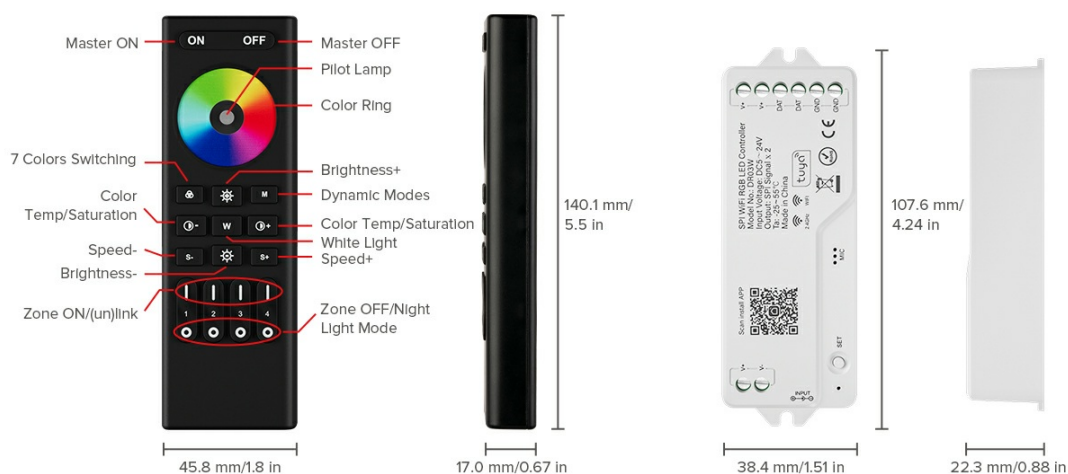


Figure 3: Wiring diagram for DR03W controller with a 4-pin WS2815 LED strip. Connect positive electrode, data, and negative electrode. The arrow on the strip indicates data/signal direction. For 12V LED strips, use a 12V power supply.

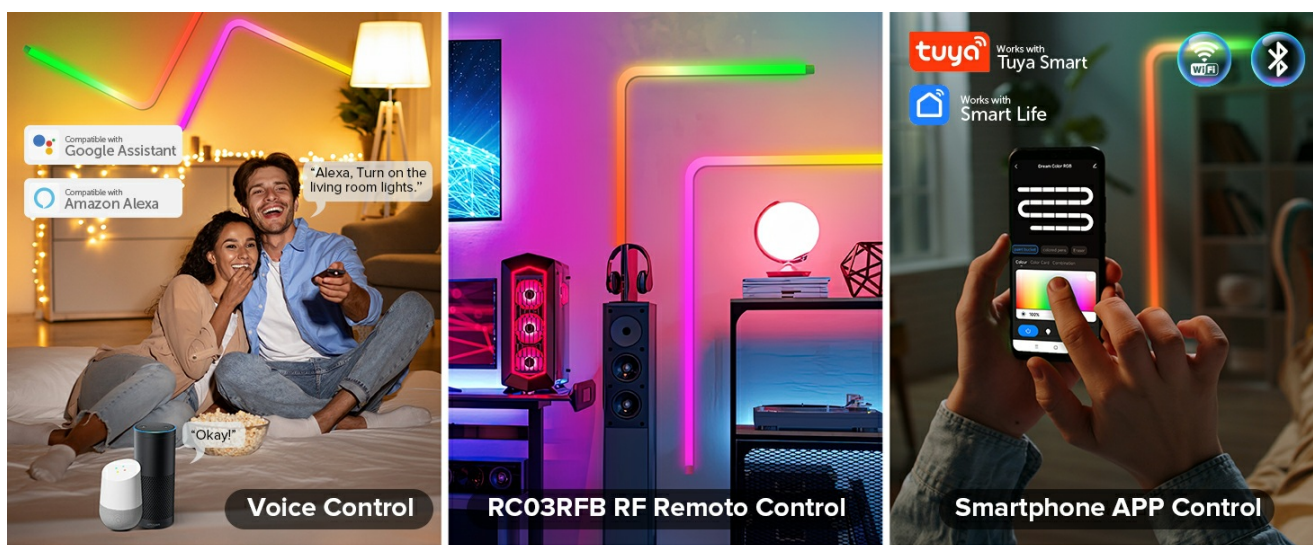


Figure 4: Series connection and voltage supplementation for LED strips. Ensure power supply output voltage matches the LED strip working voltage.



Figure 5: Parallel connection and voltage supplementation for LED strips using a signal amplifier for FCOB WS2811 IC RGB strips.

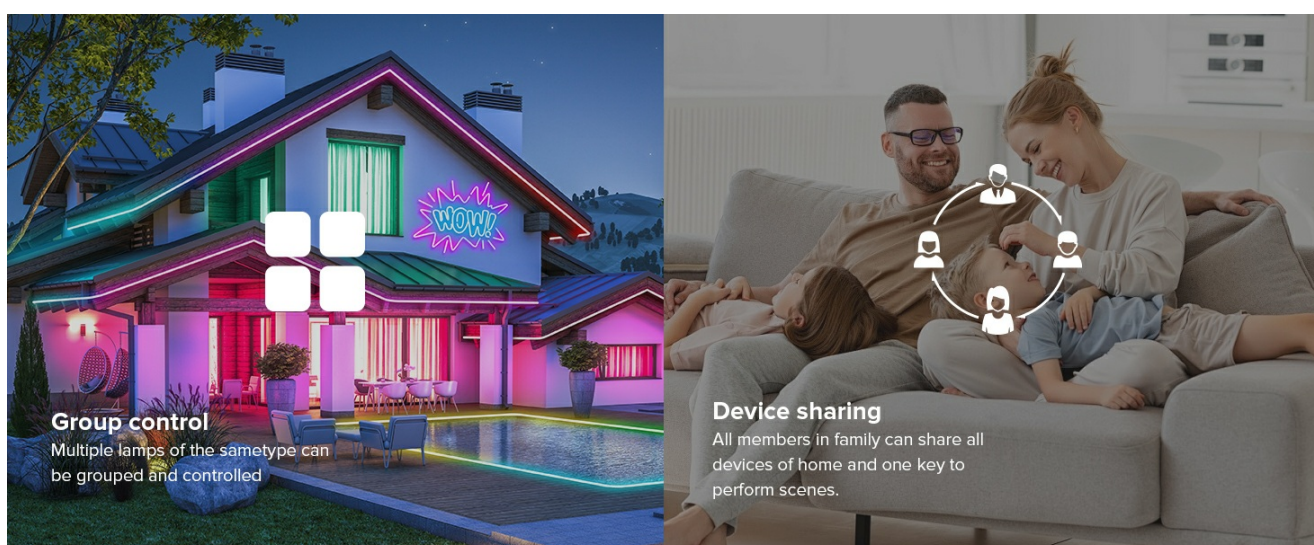


Figure 6: Overview of control options including mobile phone via Wi-Fi router, Google Assistant/Amazon Alexa, and various RF remotes (RC03RFB, RC04RFB, RC05RFB, WR01RF).

5. REMOTE CONTROL OPERATION (RC03RF)

5.1 Pairing the Remote

1. Disconnect the controller from power for 10 seconds, then reconnect.
2. With the light on, rapidly press any 'I' zone button 3 times within 3 seconds.
3. Successful pairing is confirmed when the LED strip slowly blinks 3 times.

If the light does not blink slowly, pairing failed. Please retry the steps. Note: Paired lights cannot be re-paired.

Video 1: Instructions on how to pair the RC03RF remote with the DR03W controller.

5.2 Unpairing the Remote

1. Disconnect the controller from power for 10 seconds, then reconnect.
2. With the light on, rapidly press the connected 'I' zone button 5 times within 3 seconds.
3. Successful unpairing is confirmed when the LED strip blinks rapidly 10 times.

If the light does not blink quickly, unpairing failed. Just try again – but remember, lights that are not paired will not respond to this remote.

Video 2: Instructions on how to unpair the RC03RF remote from the DR03W controller.

6. APP CONTROL (TUYA/SMART LIFE)

The DR03W controller can be controlled via the Tuya or Smart Life mobile application. Download the app from your device's app store. The app only works with 2.4G Wi-Fi networks.

Series Connection & Voltage Supplementation

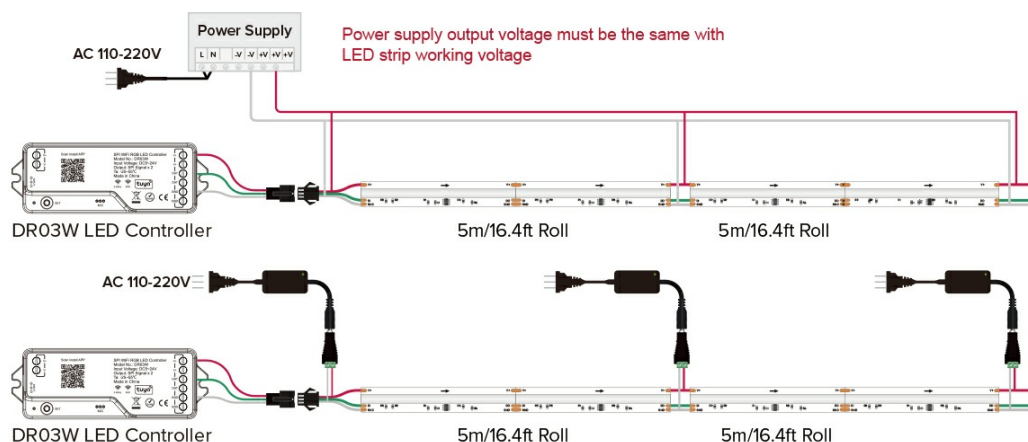


Figure 7: Remote control via smartphone app anytime, anywhere, compatible with Smart Life and Tuya Smart.

6.1 Setting LED Strip Length

In the Tuya app, navigate to the settings for your controller. Locate the 'Light Strip Length' option. The adjustable range is 20-720 pixels (default for 20 ICs). Set the pixel count to match the number of IC chips on your LED strip. For example, a 16.4ft FCOB WS2811 720LED/m RGB LED strip with 100 ICs requires setting the pixels to 100.

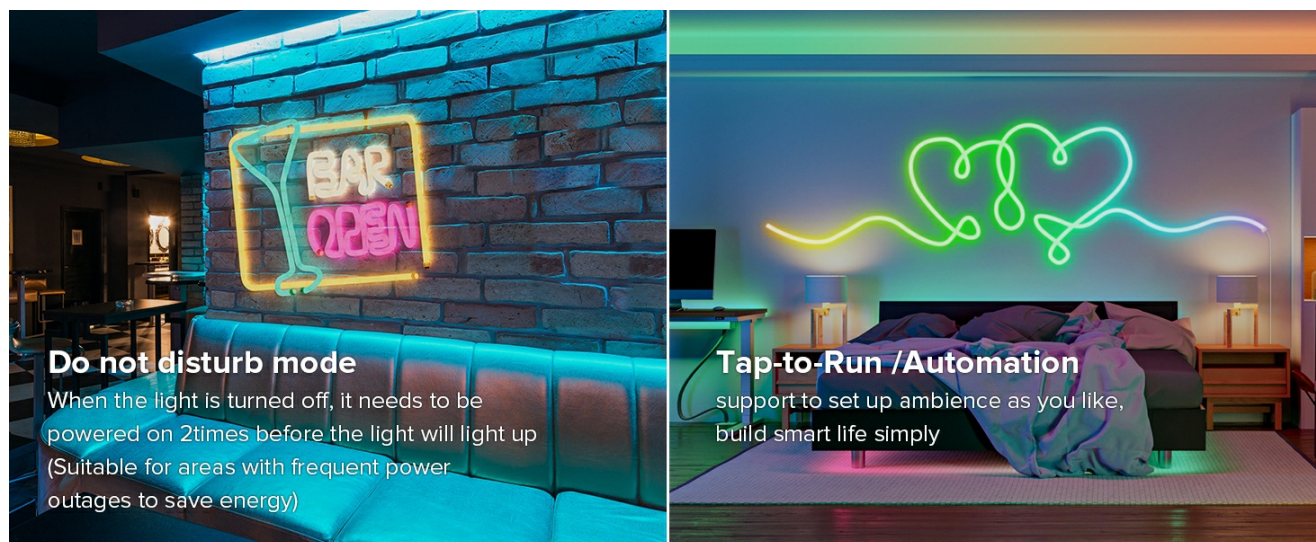
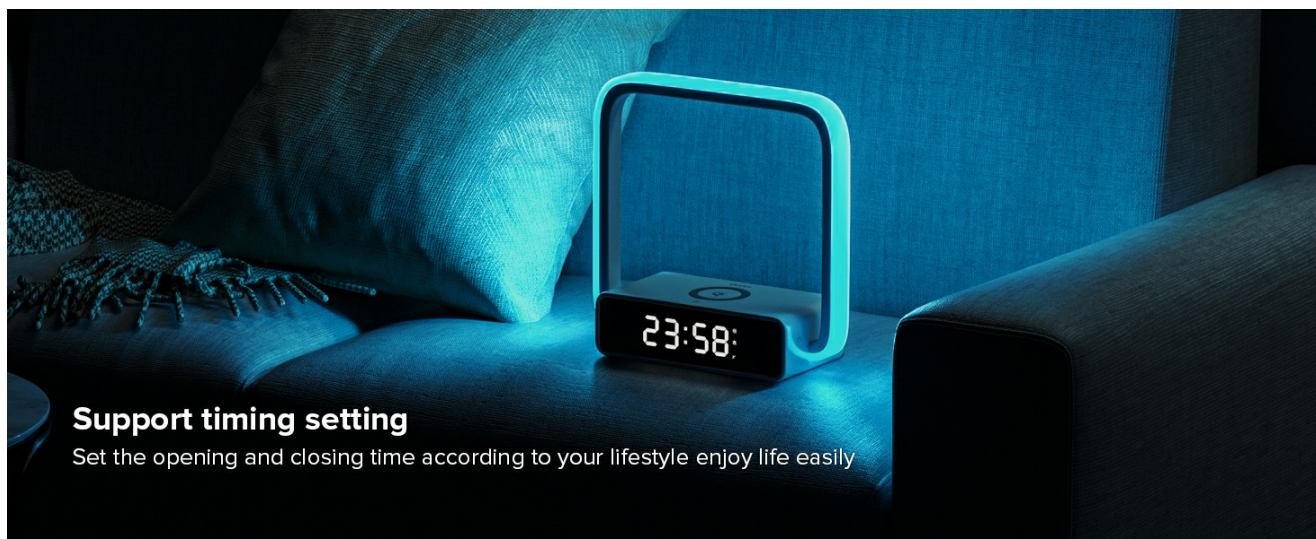


Figure 8: Steps to set the length of the LED strip according to the quantity of ICs in the Tuya app.

6.2 Color Correction

If the color displayed by the LED strip is inconsistent with the color selected in the app (e.g., green appears blue), use the color correction feature. Enter the color correction interface in the Tuya app and select the color button that matches the actual color displayed by the LED.



Support timing setting

Set the opening and closing time according to your lifestyle enjoy life easily

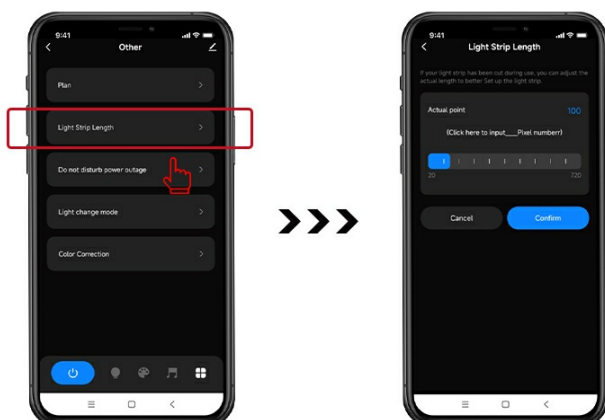
Figure 9: Steps for color correction within the Tuya app to match LED strip colors.

6.3 Color Modes

The app offers various color modes:

- **Color Bucket:** Change the color of the full segment of the LED strip. Select 'paint bucket' mode, with 3 color patterns: 'Colour', 'Color Card', 'Combination'.
- **Colored Pens:** Change the color of a single segment of the LED strip.
- **Eraser:** Turn off the color of a single segment of the LED strip.

Set the length of the LED strip according to the quantity of IC



Adjustable Range:20-720 pixels
(default for 20ICs)
Pixel count=IC Chip QTYFor example,
one roll of 16.4FT FCOB WS2811 720LED/m
RGB LED strip with 100 ICs,
so you should set the pixels to 100.

Figure 10: Various color modes available in the Tuya app for LED strip customization.

6.4 Dynamic Effects & Customization

Explore 44 predefined dynamic modes and create over 10 custom dynamic scenarios. Adjust brightness and speed to your preference.

Color Correction

Enter the color correction interface.

Within the color correction interface, select the color button that matches the actual color displayed by the LED. For example, if the LED displays red light, select the red button.

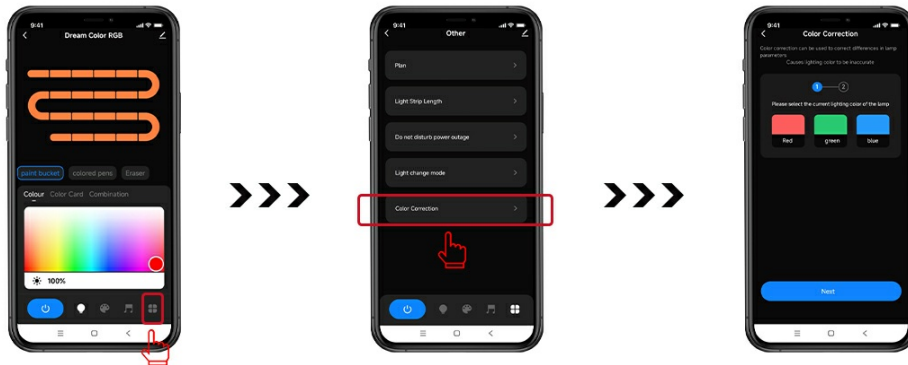


Figure 11: Customize your favorite dynamic effects using the Tuya app.

6.5 Music Sync

Synchronize your LED strip lights with music. The lights will follow the music collected by your phone's microphone.

Color Mode



Color Bucket: Change the color of the full segment of the LED strip. Select "paint bucket" mode, there are 3 color patterns for selections: "Colour", "Color Card", "Combination".

Colored Pens: Change the color of a single segment of the LED strip.

Eraser: Eraser the color of a single segment of the LED strip (turn off the strip of a single segment).

Figure 12: LED strip lights syncing with music for an immersive experience.

6.6 Group Control & Device Sharing

Multiple lamps of the same type can be grouped and controlled simultaneously. All family members can share devices and perform scenes with one key.

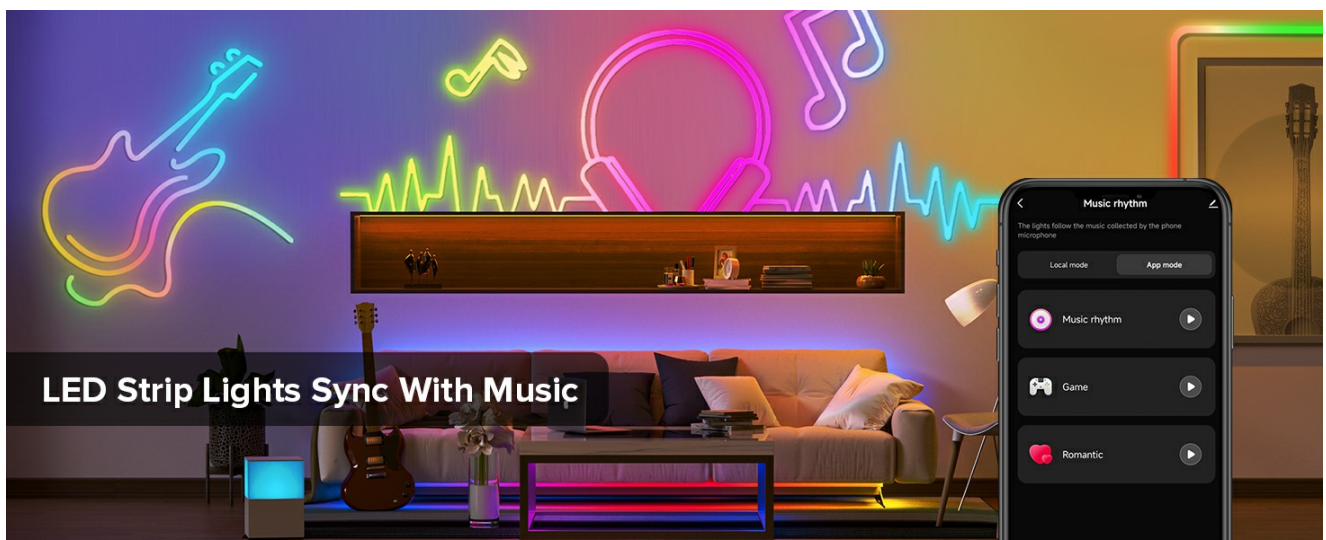


Figure 13: Group control allows managing multiple LED strips together.



Figure 14: Device sharing feature for convenient family use.

6.7 Timing & Automation

Set opening and closing times for your lights according to your lifestyle. Support Tap-to-Run and Automation to build smart life scenarios.



Figure 15: Support timing settings to automate your lighting.

6.8 Do Not Disturb Mode

When the light is turned off, it needs to be powered on 2 times before the light will light up. This mode is suitable for areas with frequent power outages to save energy.



Figure 16: Do Not Disturb mode for energy saving during power fluctuations.

7. VOICE CONTROL (ALEXA/GOOGLE HOME)

The DR03W controller is compatible with Amazon Alexa and Google Voice Assistant. Once connected to the Tuya/Smart Life app and linked with your voice assistant, you can use voice commands to control your LED strips. For example, say "Alexa, Turn on the living room lights."

Parallel Connection & Voltage Supplementation

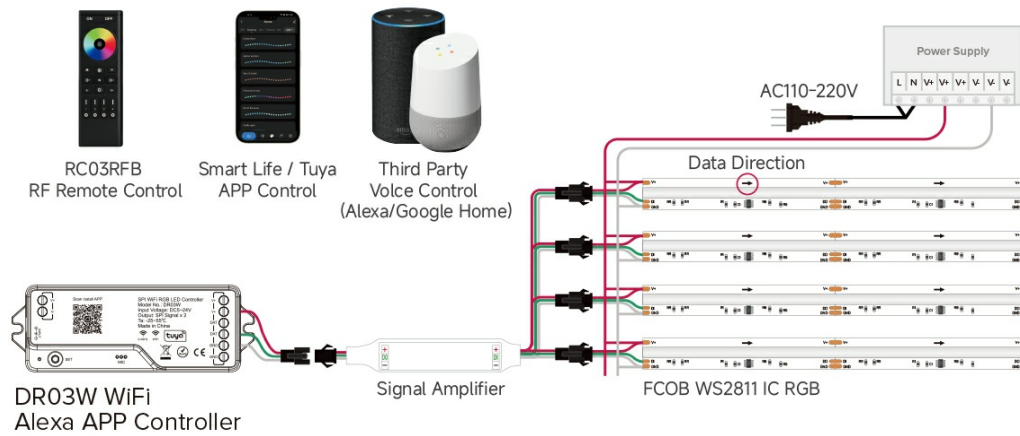


Figure 17: Voice control compatibility with Alexa and Google Assistant.

8. SPECIFICATIONS

Feature	Specification
Brand	BTF-LIGHTING
Model Number	DR03W+RC03RFB
Color	Ws2811/Ws2812b etc Rgb
Indoor/Outdoor Usage	Indoor
Special Features	Group Control, Remote Controlled, SPI 2.4Ghz WIFI Controller, SPI RGB LED, Tuya APP Control
Light Source Type	LED
Power Source	DC
Light Color	Multicolor
Material	Plastic
Controller Type	Button Control
Number of Items	1
Control Method	App
Item Weight	8.1 ounces
Batteries Included?	No
Batteries Required?	No

9. TROUBLESHOOTING

- **LED strip not lighting up:** Check all wiring connections, especially polarity. Ensure the power supply voltage matches the LED strip's requirements. Verify the power supply is functioning.
- **Remote not controlling the strip:** Ensure the remote is correctly paired with the controller as per Section 5.1. Check the remote's battery.
- **App connection issues:** Confirm your Wi-Fi network is 2.4Ghz. Ensure your mobile device is connected to the same Wi-Fi network. Restart the controller and your router.
- **Incorrect colors displayed:** Use the color calibration feature in the Tuya app (Section 6.2) to adjust the color sequence.
- **Lights not responding to app commands:** Verify the LED strip length setting in the app matches the actual IC count of your strip (Section 6.1).
- **Voice control not working:** Ensure the controller is properly linked to your Alexa or Google Home account via the Tuya/Smart Life app. Check your internet connection.

10. WARRANTY & SUPPORT

BTF-LIGHTING products are designed for reliability and performance. For warranty information or technical support, please refer to the product packaging or contact BTF-LIGHTING customer service through their official channels. Keep your purchase receipt for warranty claims.